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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,811	06/27/2003	Richard O. Slackman	1033-SS00382	8389

34456 7590 01/24/2006

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EXAMINER
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CHANNAVAJJALA, SRIRAMA T

ART UNIT	PAPER NUMBER
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2166

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/607,811

Applicant(s)

SLACKMAN, RICHARD O.

Examiner

Srirama Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-60 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-60 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/30/03.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***DETAILED ACTION***

1. Claims 1-60 are pending in this application.

***Drawings***

2. The Drawings filed on 6/27/03 are acceptable for examination purpose

***Information Disclosure Statement***

3. The information disclosure statement filed on 10/30/2003 is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy is enclosed with this Office Action.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

***4. Claims 41-50, 51-53,54-60 are rejected under 35 U.S.C. 101 because invention is directed to non-statutory subject matter.***

5. Claim 41 reads "An article comprising:

'a computer-readable medium having computer-readable program code to cause a computer to perform acts of:

6. Claim 51 reads "An article for weighting search results from....

'a computer-readable medium having computer-readable program code.....

7. Claim 54, reads "An article comprising:

'a computer-readable medium having computer-readable program code.....

these claims 41-50,51-53,54-60 are directed to "non-statutory subject matter" because it fails to recite at least one recited claim element must be hardware or physical storage medium.

**REMARKS:**

Examiner recommends applicant amend the claim 41,51,54 to overcome 35 USC 101 as given below: for example: [see specification: page 2-3, 0012]

**Claim 41:**

" computer readable **storage** medium having computer-readable program code to cause a computer to perform acts of:

**Claim 51-52:**

“ computer readable **storage** medium having computer-readable program code to cause a computer to perform acts of:

**Claim 54:**

“ computer readable **storage** medium having computer-readable program code to cause a computer to perform acts of:

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***9. Claims 1,5-8,21, 25-28,41, 45-48, are rejected under 35 U.S.C. 102(e) as being anticipated by Mao et al. [hereafter Mao], US Patent No. 6728704.***

10. As to claim 1,21,41, Mao teaches a system which including 'receiving a ranked list of search results from a search engine based on a search query' [col 1, 44-52, col 3, line 1-9], Mao directed to multiple search engines, more specifically search engines accepts query, searches network computers for information that satisfies the query and returns results in a ranking order as detailed col 1, line 47-52];

'estimating a relevance value of a particular search result in the ranked list based on its rank and actual relevance results' [col 3, line 12-19, col 5, 58-61, col 7,

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line 1-3], Mao specifically teaches each subset of entry is assigned a scoring value according to the scoring function, further scoring values are number ranges that indicate relevance value of a specific query result.

11. As to claim 5,25,45, Mao disclosed 'estimating comprises determining an interpolation function at the rank of the particular search result to estimate the relevance value' [col 6, line 14-18].

12. As to claim 6,26,46, Mao disclosed 'evaluating the interpolation function at the rank of the particular search result to estimate the relevance value' [col 6, line 29-35].

13. As to claim 7,27,47, Mao disclosed 'linearly interpolating between two actual relevance values whose ranks bracket the rank of the particular search result' [col 6, line 45-47].

14. As to claim 8,28,48, Mao disclosed 'actual relevance values are supplied by the search engine' [col 5, line 32-34].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**15. Claims 2-4,9-10,22-24,29-30,42-44,49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable Mao et al. [hereafter Mao], US Patent No. 6728704 as applied to claims 1,21,41 above and further in view of Rose et al. [hereafter Rose] US Patent No. 5870740.**

16. As to claim 2, 22,42, Mao disclosed 'ranks of the at least two others of the search results' [col 5, line 66-67, col 6, line 1-3]. It is however, noted that Mao does not

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specifically teach 'estimating comprising fitting a curve, to represent relevance as a function of rank to the actual relevance values'. On the other hand, Rose disclosed 'estimating comprising fitting a curve, to represent relevance as a function of rank to the actual relevance values' [col 4, line 56-67, col 5, line 1-4, col 6, line 57-60, col 7, line 35-39, fig 3]

It would have been obvious to one of the ordinary skill in the art at the time of Applicant's invention to incorporate the teachings of Rose et al. into merging result list from multiple search engines of Mao et al. because both Rose and Mao are directed to querying, more specifically both are directed to scoring, ranking of search list or result [see Mao: col 3, line 2-7; Rose: Abstract, fig 1b, element 160], and both Mao, and Rose specifically suggests focusing on each item in the subset assigned a scoring or ranking value [see Mao: col 3, line 4-6; Rose: fig 1b, element 160], while Mao also teaches assigning a probability values where higher probability values are likely to be selected in a list [see Mao: col 6, line 20-24].

One of the ordinary skill in the art at the time of Applicant's invention to incorporate the teachings of Rose et al. into merging result list from multiple search engines of Mao et al. because that would have allowed users of Mao to ordering the search list from the most relevant items to the least relevant items using existing relevance-ranking algorithms [see Rose: col 5, line 59-61], and adjusting the score according to the relevance-ranking algorithm for example as detailed [see Rose: col 6,



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equations 1-2] bringing the advantages of estimating values fall between specified values that produces cosine function to measure similarity [see Rose: col 7, line 4-8], thus improving both short and long query in which retrieved item's score calculated from relevance-ranking algorithm [see Rose: col 5, line 5-12].

17. As to claim 3,23,43, Rose disclosed 'evaluating the curve at the rank of the particular search result to estimate the relevance value' [col 7, line 4-9].

18. As to claim 4,24,44, Rose disclosed 'curve is a line' [see fig 3a-3d].

19. As to claim 9,29,49, Rose disclosed 'actual relevance values are not supplied by the search engine' [col 7, line 46-50].

20. As to claim 10,30,50, Mao disclosed 'determining a first actual relevance value for a most relevant one of the search result' [col 5, line 58-61]; 'determining a second actual relevance value for a least relevant one of the search results' [col 5, line 66-67, col 6, line 1]; 'wherein said estimating comprises linearly interpolating between the first actual relevance value and the second actual relevance value' [col 6, line 20-24].

***Claim Rejections - 35 USC § 102***

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***22. Claims 11-13,31-33,51-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Dutta, US Publication No. 2002/0078045 published on June 20,2002***

23. As to claim 11,31,51, Dutta teaches a system which including 'weighting search results from a search engine based on a search query' [fig 3,page 7, col 1, 0045, line 1-11], dutta specifically teaches search engine searches and ranking the results according to the weights as detailed in page 7, col 1, 0045, line 1-11;

'determining a plurality of categories associated with the search query' [page 7, col 2, 0046, line 27-31, fig 5] plurality of categories corresponds to Dutta's fig 5, element 82;

'for each of the categories, determining an associated category weighting value for the search engine' [page 7, col 2, 0047, line 1-7], Dutta specifically teaches each category associated with category weight further associated to file indexed within a

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search database, category weight related to degree of relevance as detailed in col 2, 0047, line 1-7;

‘determining a first associated relevance value for each of the categories based on the search query and one or more query terms associated with the category’ [page 7, col 2, 0047, page 8, col 1, 0048, line 1-3], Dutta specifically teaches database search query may include keywords associated with the files, further keywords are used to match search terms that satisfy the search criteria as detailed in page 7, 0047;

‘determining a weighting value based on the category weighting values and the first associated relevance values’ [page 8, col 1, 0048, line 15-30, col 2, 0051]

24. As to claim 12-13,32-33,52-53, Dutta disclosed ‘determining a second associated relevance value for each of the categories by dividing its first associated relevance value by a sum of all of the first associated relevance values’ [page 9, col 2, 0053, line 2-9].

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**25. Claims 14-15,17-20,34-35,37-40, 54-55,57-60 are rejected under 35**

***U.S.C. 103(a) as being unpatentable Mao et al. [hereafter Mao], US Patent No.***

***6728704 filed on Aug 27,2001, published on April 27, 2004 in view of Rose et al.***

***[hereafter Rose] US Patent No. 5870740.***

26. As to claim 14, 34,54,Mao teaches a system which including 'submitting a search query to a plurality of search engines' [col 2, line 29-33, col 4, line 41-48];

'receiving, from each of the plurality of search engines [col 2, line 66-67], an associated ranked list of search results based on the search query' [col 3, line 1-7];

'receiving a plurality of actual relevance values for a plurality of the search results based on the search query' [col 3, line 14-19];

'for at least one of the search results absent the actual relevance value, estimating its relevance value based on its rank, and the ranks and the actual relevance values of at least two others of the search results' [col 5, line 36-42, line 46-54], Mao suggests firstly result lists having most relevant values, secondly small number of entries from each list is selected based on subset selection criteria or technique [col 5, line 46-48], thirdly, Mao suggests "n" number of items or documents are selected from each list randomly;

'determining, for each of the plurality of search engines, an associated value' [col 5, line 56-57];

'determining, for each of the ranked lists, an associated relevance value for each of its search results based on the estimated relevance value or the actual relevance value of the search result' [col 5, line 58-67, col 6, line 1-5], Mao specifically teaches

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scoring values for each list , further score values may be the arithmetic average or a value proportional to the average for a set of scoring values [co 6, line 1-4];

‘combining the ranked lists into a single list’ [col 6, line 6-8], Mao specifically teaches merge or rank all entries from every list based on the score for each list as detailed in fig 2, element 80;

‘sorting the search results in the single list based on the relevance values’ [col 6, line 6-13], Mao specifically teaches not only merging the result list and rank all entries from all the list, but also selecting the list with highest representative value or scoring value that corresponds to sorting the search results;

It is however, noted that Mao does not specifically teach “weighting value associated with the search engine”, although Mao teaches results list from multiple search engines having scoring values is assigned to each entry as detailed in col 6, line 30-37, fig 3. On the other hand, Rose suggests “weighting value associated with the search engine” col 2, line 29-32, col 3, line 1-3, line 4-6].

It would have been obvious to one of the ordinary skill in the art at the time of Applicant’s invention to incorporate the teachings of Rose et al. into merging result list from multiple search engines of Mao et al. because both Rose and Mao are directed to querying, more specifically both are directed to scoring, ranking of search list or result [see Mao: col 3, line 2-7; Rose: Abstract, fig 1b, element 160], and both Mao, and Rose specifically suggests focusing on each item in the subset assigned a scoring or ranking value [see Mao: col 3, line 4-6; Rose: fig 1b, element 160], while Mao also teaches

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assigning a probability values where higher probability values are likely to be selected in a list [see Mao: col 6, line 20-24].

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Rose et al. into merging result list from multiple search engines of Mao et al. because that would have allowed users of Mao to ordering the search list from the most relevant items to the least relevant items using existing relevance-ranking algorithms [see Rose: col 5, line 59-61], further calculating weights with respect to vectors that represents documents that allows to compare the score according to the relevance-ranking algorithm for example as detailed [see Rose: col 2, line 24-32] bringing the advantages of improving both short and long query in which retrieved item's score calculated from relevance-ranking algorithm [see Rose: col 5, line 5-12].

27. As to claims 15,35,55, Rose disclosed 'actual values comprise normalized, search-engine supplied relevance values' [col 2, line 29-32].

28. As to claims 17,37,57, Rose disclosed 'fitting a curve, to represent relevance as a function of rank, to the actual relevance values and the ranks of the at least two others of the search results' [col 7, line 4-10, fig 3]; 'evaluating the curve at the rank of the particular search result to estimate the relevance value' [col 7; line 11-17].

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29. As to claim 18,38,58, Mao disclosed 'determining an interpolation function, to represent relevance as a function of rank, for the actual relevance values and the ranks of the at least two others of the search results' [col 6, line 14-18]; 'evaluating the interpolation function at the rank of the particular search result to estimate the relevance value' [col 6, line 29-37].

30. As to claim 19,29,59, Mao disclosed 'actual relevance values are supplied by the search engine' [col 5, line 32-34].

31. As to claim 20,30,60, Rose disclosed 'actual relevance values are not supplied by the search engine' [col 7, line 46-50].

**32. Claims 16,36,56 are rejected under 35 U.S.C. 103(a) as being unpatentable Mao et al. [hereafter Mao], US Patent No. 6728704 , Rose et al. [hereafter Rose] US Patent No. 5870740as applied to claims 1,21,41 above and further in view of Dutta, US Pub.No. 2002/0078045 published on June 20,2002.**

33. As to claims 16,36,56, Mao and Rose both disclosed search engine [see Mao: fig 1, element 16, element 40; Rose: col 3, line 1-3]; Mao and Rose both disclosed 'search query' [Mao: fig 2, element 70; Rose: fig 1b, element 150], Mao and Rose both disclosed determining scoring values [see Mao: fig 2, element 76; Rose: col 6, line 7-9]; further Rose also disclosed determining weighting value' [col 2, line 24-25, line 29-32]; both Mao and Rose disclosed relevance value for each query' [Mao: col 7, line 1-3; Rose: col 4, line 56-64. It is however, noted that both Mao and Rose do not specifically teach 'plurality of categories associated with the search query, category search engine weighting value for each of the categories, categories based on the search query and one or more query terms associated with the category, each of the categories by dividing its first associated relevance value by a sum of all first associated relevance values, each product of the associated category search engine weighting value and the second associated relevance value'. On the other hand Dutta disclosed, 'plurality of categories associated with the search query' [page 7, col 2, 0046, line 27-31, fig 5] plurality of categories corresponds to Dutta's fig 5, element 82;'category search engine weighting value for each of the categories' [page 7, col 2, 0047, line 1-7], Dutta specifically teaches each category associated with category weight further



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associated to file indexed within a search database, category weight related to degree of relevance as detailed in col 2, 0047, line 1-7;,'categories based on the search query and one or more query terms associated with the category'[page 7, col 2, 0047, page 8, col 1, 0048, line 1-3], Dutta specifically teaches database search query may include keywords associated with the files, further keywords are used to match search terms that satisfy the search criteria as detailed in page 7, 0047 ,' each of the categories by dividing its first associated relevance value by a sum of all first associated relevance values' [page 9, col 2, 0053, line 2-9]. 'each product of the associated category search engine weighting value and the second associated relevance value'[page 8, col 1, 0048, line 15-30, col 2, 0051].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Dutt into retrieval of relevance ranking and score of the documents of Rose et al, merging results list from multiple search engines that represent scoring values of Mao et al. because Dutt, Rose and Mao all directed to querying documents using multiple search engines, more specifically Rose and Mao are directed to querying, more specifically both are directed to scoring, ranking of search list or result [see Mao: col 3, line 2-7; Rose: Abstract, fig 1b, element 160], and both Mao, and Rose specifically suggests focusing on each item in the subset assigned a scoring or ranking value [see Mao: col 3, line 4-6; Rose: fig 1b, element 160], while Mao also teaches assigning a probability values where higher probability values are likely to be selected in a list [see Mao: col 6, line 20-24], while Dutta is

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directed to identifying, assigning the categories, specifically search result list ranked such that the file having the highest category weight is ranked first while the file having the lowest file having the lowest category weight is ranked last [Dutta: page 2, col 2, 0015].

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Dutta into retrieval of relevance ranking and score of the documents of Rose et al, merging results list from multiple search engines that represent scoring values of Mao et al. because that would have allowed users of Mao, Rose to incorporate identifying, assigning various categories associated with weight factor that is part of additional ranking criteria, further search result list may be ranked such that highest combined category first, lowest combined category last [sorting], bringing the advantages of improving the overall information retrieval, specifically allows user to examine more relevant search results, thus improving the overall ranking, categorization of information as suggested by Dutta [page 2, col 1, 0013].

### ***Conclusion***


#### **The prior art made of record**

US Pub. No.	20020078045
US Patent No.	6728704
US Patent No.	5870740

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

sc  
*Patent Examiner.*  
January 19, 2006.

  
SRIRAMA CHANNAVAJJALA  
PRIMARY EXAMINER